

Appln No. 09/820,844
Reply to the Office Action of October 17, 2003

REMARKS

Claims 1-52, 54-57, 59-63, 65-68, 70-76, 78-81, 83-87, 89-92, and 94-98 are pending in the present application. Claims 1-48, 97 and 98 stand withdrawn from consideration. Reconsideration is respectfully requested in light of the following remarks.

Specification Amendments

The specification at page 13 has been amended in order to correct the reference numeral of molding machine 110. Entry of the amendment is respectfully requested.

Invention

The present invention is directed to an intermediate image transfer belt for an image forming apparatus. The intermediate image transfer belt executes secondary image transfer from the intermediate image transfer belt to a recording medium. The belt is prepared by feeding a first raw liquid material into a hollow, cylindrical mold, which is included in a centrifugal molding machine, with the mold being rotated, and then curing the first raw material thereby forming a first endless belt layer on an inside of the mold. Thereafter, a second raw liquid material is fed into the mold with the mold being rotated. This second raw liquid is then cured thereby forming a second belt layer. The first layer is elastic while the second belt layer has greater hardness than the first layer. The first belt layer has a hardness ranging from 30° C to 70° C, as measured by JIS A scale, and the second belt layer has a thickness ranging from 30 to 1,000 micrometers.

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Another embodiment of the intermediate image transfer belt of the invention is described in Claim 73.

The claimed transfer belt of the invention provides the capability of enabling the transfer of images from the belt to plain paper sheets or similar recording media whose surfaces are not smooth.

Prior Art Rejection

Claims 49-52, 54-57, 59-63, 70-76, 78-81, 83-87, 89-92 and 95-96 stand rejected based on 35 USC 103(a) as obvious over Tanaka et al U. S. Patent 5,978,638. This ground of rejection is respectfully traversed.

The Examiner states on page 3 of the outstanding Office Action that the structure of the at least bilayer belt as shown in Figs 1 and 2 of the reference is the same as the bilayer belt of the present invention, particularly as shown in Fig 5 of the present application. To the contrary, however, layer 101 of the present belt does not correlate directly with layer 30 of the belt 20 of the patent] and layer 102 of the present belt does not correlate directly in function with layer 31 of the patent. That is, in the belt 100 of the present invention, the layer 101, which is first formed in the rotating mold, is the "outside" layer of the belt which ultimately contacts the surface of a paper sheet to transfer an image to the paper.] As stated in the text of the application on page 18, this layer has a JIS hardness ranging from 30° to 70° C. When this layer comes into contact with a paper sheet, it has sufficient deformability to conform with the greater irregularities of plain paper (in contrast to the much smoother surfaced paper normally used in electrophotographic image devices) to effect a superior

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transferred image to a plain paper sheet in comparison to known the image transfer surface of known image transfer belts. The second layer 102 or "inside" layer of the belt is specified as having a thickness of 30 to 1,000 μm and on page 20 of the text is described as having a greater hardness than outside layer 101. On the other hand, the "outside" layer, which comes into contact with paper sheet, of the belt shown and described by Tanaka et al, is the layer 31 of the bilayer belt shown in Fig 1. This outside layer or covering layer then correlates with the layer 101 of the belt of the present invention, and is not the elastic layer 30 of the patent. Rather, the elastic layer 30 of the belt of the patent is the "inside" or base layer of the basic bilayer structure which is said to have a hardness of 85° C or less. Accordingly, "the claimed invention has a structure that is (not) the same as the structure of Figure 1 taught by Tanaka et al."

It must also be noted that there is no discussion of the particular problem described in the present case which the image transfer belt of the invention overcomes. Thus, there is no motivation provided by the reference which would lead one of skill in the art to the present transfer belt as formulated. In this context it is noted that an important parameter of the material of covering layer 31 is its permittivity (ϵ) which is said to be ≤ 6 . On the other hand, for layer 101 of the present bilayer belt, permittivity is not mentioned as a factor of the belt which is significant. What is significant with respect to layer 101 is that it have the capability of deforming and in the process conforming to a significant extent to the irregularities of the surface of plain paper. The permittivity mentioned by the patent, on the other hand, is not a property that correlates to the essential surface conforming ability of the outer layer of the present transfer belt.

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Applicants also have observed that the Examiner apparently has not considered the detailed disclosure in columns 6 and 7 of the reference which focuses on the ^{structural feature} of the covering layer of the belt of the patent to raise the potential of the surface of the transfer belt immediately after the primary transfer point and delaying the attenuation of charge received from the surface of the transfer belt.] The covering layer of the belt of the reference has a specific surface potential. The covering surface of the transfer belt has the appropriate thickness and permittivity to satisfy the requirements of the surface potential of the transfer belt. This clearly indicates that it is the covering layer surface (outside) that comes into contact with a receiving paper sheet. Accordingly, the transfer belt in its embodiments as claimed in the present invention is not suggested by Tanaka et al and withdrawal of the rejection is respectfully requested.

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Applicants respectfully remain of the opinion that the present application is in
condition for allowance. Favorable reconsideration is respectfully requested.

Respectfully submitted,

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